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EXAMINER
DANIEL JR, WILLIE J

ART UNIT	PAPER NUMBER
2686	

DATE MAILED: 04/13/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) FROM
THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed
  after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any
  earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>06 February 2004</u>.

2a)☐ This action is **FINAL**.   2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is
closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) <u>1 and 4-8</u> is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) <u>1 and 4-8</u> is/are rejected.

7)☒ Claim(s) <u>2 and 3</u> is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All   b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage
application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☒ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.

4)☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ .

5)☐ Notice of Informal Patent Application (PTO-152)

6)☐ Other: _____.

DETAILED ACTION

Drawings

1. The objection to the Fig. 5 is withdrawn.

Specification

2. The objection to the specification is withdrawn.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness

rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in
> section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are
> such that the subject matter as a whole would have been obvious at the time the invention was made to a person
> having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the
> manner in which the invention was made.

Claims 1 and 4-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Lim (US**

6,628,974) in view of **Iwata et al** (hereinafter Iwata) **(US 5,723,959)**

Regarding **Claim 1**, Lim teaches of an automatically and manually folded cellular

phone (1) which reads on the claimed "portable wireless terminal" having at least a main

body (3) and a sub-body (2) installed on the main body (3) so as to be opened and closed

comprising:

a first sensor (51) for sensing a complete opening of the sub-body (2) from the main body

(3) (see Figs. 5 and 6);

a second sensor (52) for sensing a complete closing of the sub-body (2) onto the main

body (3) (see Figs. 5 and 6);

an driving section (11) which reads on the claimed "opening/closing device" for

opening/closing the sub-body (2) in accordance with a control (5) of opening/closing of the

sub-body (2) and having a motor (12) housed inside of the terminal (1) (see abstract; col. 4,

line 55 - col. 5, line 24; col. 6, line 48 - col. 7, line 49; col. 8, lines 55-57; col. 9, lines 29-31;

col. 10, lines 35-36; Figs. 5-6, 10-12, and 20). Lim fails to disclose having a motor

overcurrent monitoring section and controlling of motor according to overcurrent. However,

the examiner maintains that a motor overcurrent monitoring section and controlling of motor according to overload was well known in the art, as taught by Iwata.

In the same field of endeavor, Iwata teaches of having the following:

a motor lock detection circuit (88) which reads on the claimed "motor overcurrent monitoring section" for monitoring current flow to the motor (12) to determine an overload condition of the motor (12) (see col. 4, lines 1-5; col. 5, line 66 - col. 6, line 10; Fig. 1); and

a control device (10) for controlling operation of the motor (12) in accordance with the overload condition as determined by the motor overcurrent monitoring section (88) when complete opening/closing (raising/lowering) of the window glass which reads on the claimed "sub-body" is sensed by the first and the second sensors when the opening/closing (raising/lowering) device automatically opens/closes (raising/lowering) the sub-body (see col. 4, lines 1-5; col. 5, line 66 - col. 6, line 10; col. 11, line 64 - col. 12, line 3; Fig. 1), where the electric motor has an overload detection circuit for monitoring the current of the complete raising/lowering of the window.

Therefore, it would be obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of Lim and Iwata to have a motor overcurrent monitoring section and controlling the motor according to overcurrent.

The advantage of combining the teachings of Lim and Iwata is to have a motor that that is capable of raising/lowering (opening/closing) an object (e.g., window glass) which has a controlling device to prevent faulty operation and maintain stability (see Iwata - abstract, col. 2, lines 30-62; col. 11, line 64 - col. 12, line 3).

Regarding **Claim 4**, Lim teaches of a method for controlling opening/closing of a

sub-body (1) in a foldable portable wireless terminal (1) having at least a main body (3), a

sub-body (1) installed on the main body (3) so as to be openable and closable, a first sensor

(51) for sensing a complete opening of the sub-body from the main body, and a second

sensor (52) for sensing a complete closing of the sub-body onto the main body (1), the

method comprising the steps of:

determining whether or not a complete opening/closing of the sub-body (2) is sensed by

the first and the second sensors (50) during automatic opening/closing of the sub-body (2)

(see abstract; col. 4, lines 55 - col. 5, line 24; col. 6, lines 48 - col. 7, line 49; Figs. 5-6 and

10-12). Lim fails to disclose determining an overload condition based on current supplied

and controlling the operation of the motor according to the overload. However, the examiner

maintains that determining an overload condition based on current supplied and controlling

the operation of the motor according to the overload was well known in the art, as taught by

Iwata.

Iwata further teaches of having the following:

determining an overload condition of a motor (12) housed inside of the terminal based on

current supplied to the motor if incomplete opening/closing (raising/lowering) of the sub-

body is sensed (see col. 6, lines 11-15; col. 7, line 51 - col. 8, line 62; Fig. 1), where a foreign

object is detected to prevent the raising/lowering of the window and the motor is controlled

according to the overload condition; and

controlling operation of the motor (12) in accordance with the determined overload condition (see col. 6, lines 11-15; col. 7, line 51 - col. 8, line 62; Fig. 1), where the motor is controlled according to the detected overload condition.

Therefore, it would be obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of Lim and Iwata for determining an overload condition based on current supplied and controlling the operation of the motor according to the overload.

The advantage of combining the teachings of Lim and Iwata is to have a motor that that is capable of raising/lowering (opening/closing) an object (e.g., window glass) which has a controlling device to prevent faulty operation and maintain stability (see Iwata - abstract, col. 2, lines 30-62; col. 11, line 64 - col. 12, line 3).

Regarding **Claim 5**, Lim teaches of having a motor (12) (see col. 10, line 35; Fig. 20). Lim fails to disclose determining the overload condition based voltage difference. However, the examiner maintains that determining the overload condition based voltage difference was well known in the art, as taught by Iwata.

Iwata further teaches of having the following:

wherein the determination of the overload condition of the motor (12) is made based on a voltage difference corresponding to a current difference between the current supplied to the motor in normal operation and the current supplied to the motor in the overload condition (col. 5, line 66 - col. 6, line 17; col. 7, line 51 - col. 8, line 14; Figs. 1-2), where the current-voltage difference is used to determine the overload condition of the motor.

Therefore, it would be obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of Lim and Iwata to determine the overload condition based voltage difference.

The advantage of combining the teachings of Lim and Iwata is to have a motor that that is capable of raising/lowering (opening/closing) an object (e.g., window glass) which has a controlling device to prevent faulty operation and maintain stability (see Iwata - abstract, col. 2, lines 30-62; col. 11, line 64 - col. 12, line 3).

Regarding **Claim 6**, Lim teaches a method for controlling opening/closing of a sub-body (2) in a foldable portable wireless terminal (1) having a main body (3) and a sub-body (2) installed on the main body (3) so as to be openable and closable, the method comprising the steps of:

operating a motor (12) for automatically opening/closing the sub-body in accordance with an input by a user (see abstract; column 4, lines 55 - column 5, line 24; column 8, lines 53-57; column 9, lines 29-31; col. 10, line 35; Figs. 5, 12 and 20). Lim fails to disclose determining the overload condition of motor for opening/closing based voltage difference and controlling operation of motor according to the overload. However, the examiner maintains that determining the overload condition of motor for opening/closing based voltage difference and controlling operation of motor according to the overload was well known in the art, as taught by Iwata.

Iwata further teaches of having the following:

determining an overload condition of the motor for opening/closing (raising/lowering) the sub-body based on a voltage difference corresponding to a current difference between the

current supplied to the motor (12) in a normal operation and the current supplied to the motor

(12) in the overload condition (col. 5, line 66 - col. 6, line 17; col. 7, line 51 - col. 8, line 62;

Figs. 1-2), where the current-voltage is determine to the overload condition of the motor; and

controlling operation of the motor (12) for opening/closing (raising/lowering) the sub-

body in accordance with the determined overload condition (see col. 6, lines 11-15; col. 7,

line 51 - col. 8, line 62; Fig. 1), where the motor is controlled according to the detected

overload condition.

Therefore, it would be obvious to one of ordinary skill in the art at the time the

invention was made to combine the teachings of Lim and Itawa for determining the overload

condition of motor for opening/closing based voltage difference and controlling operation of

motor according to the overload.

The advantage of combining the teachings of Lim and Iwata is to have a motor that

that is capable of raising/lowering (opening/closing) an object (e.g., window glass) which has

a controlling device to prevent faulty operation and maintain stability (see Iwata - abstract,

col. 2, lines 30-62; col. 11, line 64 - col. 12, line 3).

Regarding **Claim 7**, Lim teaches a method for controlling opening/closing of a sub-

body in a foldable portable wireless terminal (1) having at least a main body (3), a sub-body

(2) installed on the main body (3) so as to be openable and closable, a first sensor (51) for

sensing a complete opening of the sub-body from the main body (3), and a second sensor

(52) for sensing a complete closing of the sub-body (2) onto the main body (3) (see abstract;

col. 4, lines 55 - col. 5, line 24; col. 6, lines 48 - col. 7, line 49; Figs. 5-10, 6, and 10-12).

Lim fails to disclose determining an overload state of a motor, controlling opening/closing of

motor in overload state, and returning the sub-body to an initial state. However, the

examiner maintains that determining an overload state of a motor, controlling

opening/closing of motor in overload state, and returning the sub-body to an initial state was

well known in the art, as taught by Iwata.

Iwata further teaches of having the following:

determining an overloaded state of a motor (12) housed inside of the terminal based on

the current supplied to the housed motor (12) if incomplete opening/closing

(raising/lowering) of the sub-body is sensed (see col. 6, lines 11-15; col. 7, line 51 - col. 8,

line 62; Fig. 1), where a foreign object is detected to prevent the raising/lowering of the

window and the motor is controlled according to the overload condition;

controlling opening/closing of the sub-body repeatedly as many times as predetermined if

incomplete opening/closing of the sub-body has been sensed and the housed motor

is in an overloaded state (see col. 7, line 25 - col. 9, line 55; col. 21, line 41 - col. 23, line 22;

Fig. 2a-3d; 12a-13d), where the motor continuously attempts to close a certain amount a

times based on the timer before reversing operation and stopping; and

returning the sub-body to an initial state if incomplete opening/closing of the sub-body is

sensed and the overloaded state continues even after the controlling has been repeated the

predetermined times (see col. 7, line 25 - col. 9, line 55; col. 21, line 41 - col. 23, line 22; Fig.

2a-3d; 12a-13d), where the motor returns the window to an initial state after continuous

attempts to close/open a certain amount a times based on the timer before reversing operation

and stopping.

Therefore, it would be obvious to one of ordinary skill in the art at the time the

invention was made to combine the teachings of Lim and Itawa for determining an overload

state of a motor, controlling opening/closing of motor in overload state, and returning the

sub-body to an initial state

The advantage of combining the teachings of Lim and Iwata is to have a motor that

that is capable of raising/lowering (opening/closing) an object (e.g., window glass) which has

a controlling device to prevent faulty operation and maintain stability (see Iwata - abstract,

col. 2, lines 30-62; col. 11, line 64 - col. 12, line 3).

Regarding **Claim 8**, Lim teaches a method for controlling opening/closing of a sub-

body in an automatically and manually folded portable wireless terminal (1) having at least a

main body (3), a sub-body (2) installed on the main body (2) so as to be openable and

closable, and a sensor (50) for sensing a complete opening of the sub-body from the main

body, the method comprising the steps of:

determining whether or not the sensor (50) senses a complete opening of the sub-body

during automatic opening (see abstract, col. 4, line 55 - col. 5, line 24; col. 6, line 48 - col. 7,

line 49; and as shown in Figs. 5-6 and 10-12). Lim fails to disclose determining an overload

state of the motor, controlling opening of the motor in an overload state, and ceasing

operation of the motor. However, the examiner determining an overload state of the motor,

controlling opening of the motor in an overload state, and ceasing operation of the motor

maintains that was well known in the art, as taught by Iwata.

Iwata further teaches of having the following:

determining an overloaded state of a motor (12) housed inside of the terminal based on

current supplied to the housed motor (12) if incomplete opening is sensed by the sensor (see

col. 6, lines 11-15; col. 7, line 51 - col. 8, line 62; Fig. 1), where a foreign object is detected

to prevent the raising/lowering of the window and the motor is controlled according to the

overload;

controlling opening of the sub-body as many times as predetermined if incomplete

opening is sensed and the housed motor (12) is determined to be in an overloaded state (see

col. 7, line 25 - col. 9, line 55; col. 21, line 41 - col. 23, line 22; Fig. 2a-3d; 12a-13d), where

the motor continuously attempts to close/open a certain amount a times based on the timer

before reversing operation and stopping; and

ceasing operation of the housed motor (12) if incomplete opening of the sub-body is

sensed and the overloaded state of the housed motor (12) continues even after controlling the

opening of the sub-body the predetermined times (see col. 7, line 25 - col. 9, line 55; col. 21,

line 41 - col. 23, line 22; Fig. 2a-3d; 12a-13d), where the motor stops operation after

continuously attempting to close/open a certain amount a times based on the timer.

Therefore, it would be obvious to one of ordinary skill in the art at the time the

invention was made to combine the teachings of Lim and Iwata determining an overload state

of the motor, controlling opening of the motor in an overload state, and ceasing operation of

the motor.

The advantage of combining the teachings of Lim and Iwata is to have a motor that

that is capable of raising/lowering (opening/closing) an object (e.g., window glass) which has

a controlling device to prevent faulty operation and maintain stability (see Iwata - abstract,

col. 2, lines 30-62; col. 11, line 64 - col. 12, line 3).

Allowable Subject Matter

4. **Claims 2 and 3** are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Regarding **Claim 2**, the applied references fail to disclose or render the obvious, the automatically and manually folded portable wireless terminal of claim 1, wherein the motor overcurrent monitoring section comprises: a first node connected to a battery output line for applying a first voltage corresponding to the battery voltage to a first input end of the control device; a second node connected between the first node and the motor for applying a second voltage, which corresponds to a current supplied to the motor, to a second input end of the control device; and a current sensing resistor located between the first node and the second node for sensing the current supplied to the motor from the first node through the second node.

Response to Arguments

5.   Applicant's arguments, see page 6, third paragraph, filed 06 February 2004, with respect to the rejection(s)of claim(s) 1 and 4-8 under 35 USC 102(e)[1] have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of **Itawa (US 5,723,959)**.

Conclusion

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

   a. **Nishibe et al. (US 5,453,669)** discloses *Motor Current Detection Circuit.*

   b. **Lemirande (US 4,394,607)** discloses *Control Systems For Gates and The Like Including a Motor Overload Monitoring Circuit.*

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Willie J. Daniel, Jr. whose telephone number is (703) 305-8636. The examiner can normally be reached on 7:30-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Marsha Banks-Harold can be reached on (703) 305-4379. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

WJD,JR/wjd,jr
07 April 2004

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